

WHAT IS CLAIMED IS:

1. A radio communication system for performing radio communication control, comprising:

a propagation information calculation device  
5 including continuous time slot allocating means for continuously allocating time slots in a frame to generate a continuous time slot, and propagation information calculating means for communicating with a terminal unit during a period of the continuous time slot to calculate propagation information about radio wave propagation between a radio base station and the terminal unit; and

a transmission timing calculation device including transmission timing calculating means for calculating, during the period of the continuous time slot and based on 15 the propagation information, transmission timing for signal to be transmitted from the terminal unit to the radio base station, and signal transmitting means for transmitting the signal in accordance with the transmission timing.

20           2. The radio communication system according to claim 1, wherein, to calculate the propagation information, said propagation information calculating means measures a time from transmission of test data to the terminal unit to reception of the test data returned from the terminal unit, 25 and calculates a radio wave propagation time or distance between the radio base station and the terminal unit.

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3. The radio communication system according to claim 1, wherein said transmission timing calculation device stores information on the calculated transmission timing in a nonvolatile memory.

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4. The radio communication system according to claim 1, wherein said continuous time slot allocating means cancels allocation of the continuous time slot after the transmission timing is calculated.

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5. A propagation information calculation device arranged in a radio base station for calculating radio wave propagation information, comprising:

continuous time slot allocating means for  
15 continuously allocating time slots in a frame to generate a continuous time slot; and

propagation information calculating means for  
communicating with a terminal unit during a period of the  
continuous time slot to calculate the radio wave propagation  
20 information about radio wave propagation between the radio  
base station and the terminal unit.

6. A transmission timing calculation device arranged in a terminal unit for calculating transmission  
25 timing for signal, comprising:

transmission timing calculating means for  
calculating, during a period of a continuous time slot

generated by continuously allocating time slots, transmission timing for signal to be transmitted from the terminal unit to a radio base station in accordance with propagation information about radio wave propagation between

5 the radio base station and the terminal unit; and

signal transmitting means for transmitting the signal in accordance with the transmission timing.

7. A radio communication method for performing  
10 radio communication control, comprising:

continuously allocating time slots in a frame to generate a continuous time slot;

communicating with a terminal unit during a period of the continuous time slot to calculate propagation  
15 information about radio wave propagation between a radio base station and the terminal unit;

calculating, during the period of the continuous time slot and based on the propagation information, transmission timing for signal to be transmitted from the  
20 terminal unit to the radio base station; and

transmitting the signal in accordance with the transmission timing.

8. The radio communication method according to  
25 claim 7, wherein, to calculate the propagation information, a time from transmission of test data to the terminal unit to reception of the test data returned from the terminal

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unit is measured to calculate a radio wave propagation time or distance between the radio base station and the terminal unit.

5                 b. A radio communication system for performing radio communication control, comprising:

a base station location information acquisition device including base station location information acquiring means for acquiring base station location information which is information on location of a radio base station, and base station location information notifying means for notifying the base station location information; and

10                 a transmission timing calculation device including terminal location information acquiring means for acquiring terminal location information which is information on location of a terminal unit, propagation information calculating means for calculating, based on the base station location information and the terminal location information, propagation information about radio wave propagation between the radio base station and the terminal unit, transmission timing calculating means for calculating, based on the propagation information, transmission timing for signal to be transmitted from the terminal unit to the radio base station, and signal transmitting means for transmitting the 20 signal in accordance with the transmission timing.

25                 10. The radio communication system according to

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claim 9, wherein said base station location information acquiring means uses a satellite-assisted positioning system to acquire the base station location information.

5           11. The radio communication system according to claim 9, wherein said terminal location information acquiring means uses a satellite-assisted positioning system to acquire the terminal location information.

10           12. The radio communication system according to claim 9, wherein said transmission timing calculation device stores information on the calculated transmission timing in a nonvolatile memory.

15           13. A base station location information calculation device arranged in a radio base station for calculating location information about location thereof, comprising:

base station location information acquiring means  
20 for acquiring base station location information which is the location information of the radio base station; and

base station location information notifying means  
for notifying the base station location information.

25           14. A transmission timing calculation device arranged in a terminal unit for calculating transmission timing for signal, comprising:

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terminal location information acquiring means for acquiring terminal location information which is information about location of the terminal unit;

5 propagation information calculating means for calculating, based on the terminal location information and base station location information which is information about location of a radio base station, propagation information about radio wave propagation between the radio base station and the terminal unit;

10 transmission timing calculating means for calculating, based on the propagation information, transmission timing for signal to be transmitted from the terminal unit to the radio base station; and

15 signal transmitting means for transmitting the signal in accordance with the transmission timing.

16. A radio communication method for performing radio communication control, comprising:

20 acquiring base station location information which is information about location of a radio base station;

notifying the base station location information;

acquiring terminal location information which is information about location of a terminal unit;

25 calculating, based on the base station location information and the terminal location information, propagation information about radio wave propagation between the radio base station and the terminal unit;

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calculating, based on the propagation information,  
transmission timing for signal to be transmitted from the  
terminal unit to the radio base station; and  
transmitting the signal in accordance with the  
5 transmission timing.